

Appln. No.: 10/535,539
Amendment Dated August 27, 2007
Reply to Final Office Action of April 27, 2007

TJA-121US

Remarks/Arguments:

Claims 1-14 are pending. All pending claims stand rejected.

Rejections Under 35 USC §103

The Office Action at page 2 sets forth "Claims 1, 2 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haub U.S. Patent No. 2,362,132 in view of Kummer U.S. Patent No. 2,822,911." Applicants respectfully traverse this rejection for the reasons set forth below.

Applicants' invention, as recited in claim 1, includes features not disclosed or suggested by either Haub or Kummer, namely:

... a thrusting wheel driven in a rotary fashion by driving means and having radial blades ...

... a stationary curved support track provided below said radial blades, the articles being pushed by the radial blades on and along the support track between a delivery end of an inlet conveyor and a reception end of an outlet conveyor ...

... railing means along at least one part of said support track ...

... said inlet conveyor is a conveyor adapted to convey articles upright on their base on a transfer surface and said outlet conveyor is an overhead conveyor adapted to convey articles hanging from a projecting configuration on a top part thereof along sustaining guides of the overhead outlet conveyor, with said support track of the transfer unit being connected to vertical movement means that can be driven to adapt the vertical distance between said support track and said sustaining guides of the outlet conveyor to articles having said projecting configuration at different heights. (Emphasis added)

These features are disclosed in applicants' specification, for example, at page 5, line 4 through page 6, line 6.

Applicants' invention is an adjustable transfer unit to transfer articles from a first conveyor, such that articles are conveyed upright on their base on a support surface, to a second conveyor. Further, articles are conveyed hanging from a projecting configuration formed on a top part thereof along sustaining guides. If articles to be transferred were always of the same type having all the same dimensions, no transfer means would be necessary

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because the transfer could be carried out by simply placing the sustaining guides of the second conveyor at a distance from the support surface of the first conveyor in accordance with the distance between the base and the projecting configuration of the articles. The problem arises when different batches of articles having different dimensions have to be transferred, because it would make necessary to move up or down the first conveyor or the second conveyor to adapt the distance between the support surface of the first conveyor and the sustaining guides of the second conveyor to the distance between the base and the projecting configuration of the articles of the different batches, which would be time consuming and expensive. To solve this problem, the present invention provides an adjustable transfer unit for transferring upright and aligned articles from a belt-type inlet conveyor to an overhead-type outlet conveyor comprising a rotary thrusting wheel having radial blades and a stationary curved support track provided below the radial blades, wherein the articles are pushed by the radial blades on and along the support track between a delivery end of the inlet conveyor and a reception end of the outlet conveyor, with railing means being provided along at least one part of the support track. The support track of the transfer unit is connected to vertical movement means that can be suitably driven to adapt the vertical distance between the support track and the sustaining guides of the outlet conveyor to articles having the projecting configuration at different heights. Thus, with a simple operation of the vertical movement means the position of the support track of the transfer unit is quickly shifted to the convenient place for a new type of article without the need of moving the inlet and outlet conveyors.

Haub is relied upon for "[teaching] transferring upright and aligned articles from a first (2) to a second (4) conveyor, a thrusting wheel (15) driven in a rotary fashion by driving means and having radial blades (41)" The Office readily admits that Haub does not teach an outlet conveyor being an overhead conveyor adapted to convey articles hanging from a projecting configuration on a top part thereof along sustaining guides of the overhead outlet conveyor. The Office relies on Kummer to teach these admitted missing features. Applicants respectfully disagree with the overly broad interpretation of these references.

First, as the Office admits, Haub fails to disclose an outlet conveyor in the form of an overhead conveyor adapted to convey articles hanging from a projecting configuration on a top part thereof along sustaining guides. Rather, Haub teaches the transfer of upright articles from a first (2) to a second (4) conveyor, both conveyors (2, 4) at substantially the same level but conveyor (4) being a lean cross conveyor.

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Second, Kummer et al. describes an apparatus having a base (10) supporting a bottle filler unit with a rotating tank or bowl (12) provided with equidistant spaced apart filling valves (13) and a bottle capper unit with a capping head (27). According to Kummer, bottles are fed to the filler unit supported on individual platform-like bottle supports or lifters (16) mounted on radial brackets (14) rotatable about a vertical column (11). Each bottle lifter (16) is spring loaded to lift the corresponding bottle so as to engage its neck with one of the filling valves (13) along a portion of the rotary path in order to fill the bottle (col. 1, line 72 - col. 2, line 11). As the bottles complete the filling operation, they are removed from the successive bottle lifters (16) and transferred to a platform (29) serving to support the bottles below the capper unit and as they are moved away after capping. In the capper unit, the capping head (27) is mounted on a vertical shaft (22) driven to vertically reciprocate in order to raise and lower the capping head (27) for capping the bottles (col. 2, lines 12-43). The vertical position of both the filler unit and the capper unit with respect to the base (10) can be adjusted by means of respective mechanisms driven by cranks (51) and (26), respectively, so as to adjust the heights of the bowl (12) and capping head (27) to the dimensions of different types of bottles (col. 4, lines 18-29).

Kummer does not disclose or suggest, however, an overhead conveyor adapted to convey articles hanging from a projecting configuration formed on a top part thereof along sustaining guides. Furthermore, in Kummer both the first conveyor (assuming as such a unit including the series of bottle lifters) and the second conveyor having the platform (29) are of the type adapted to convey articles upright on their base laying on a surface. What is adjusted here, when changing from one type of bottle to another is the height of the filler unit and the capper unit with respect to support surfaces of the first and second conveyors, as mentioned above. Therefore in Kummer there is no adjustment of the relative height of their respective support surfaces when changing from one type of bottle to another.

Thus, Kummer does not teach a stationary support track associated with a transfer unit and connected to vertical movement means that can be driven so as to adapt the vertical distance between the support track of the first conveyor and the sustaining guides of the second conveyor to articles having a projecting configuration at different heights. As such, Kummer fails to make up for the admitted deficiencies of Haub.

Because Haub and Kummer in combination do not disclose or suggest every feature of applicants' claim 1, it is respectfully submitted that the rejection of claim 1 as being

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unpatentable over Haub in view of Kummer is improper, should be withdrawn and the claim allowed.

Although claims 2 and 11-14 depend on claim 1 and, thus, are likewise not subject to rejection for at least the reasons set forth above with respect to claim 1, applicants wish to point out other additional features of selected ones of these dependant claims that further distinguish over the cited prior art.

Applicants' invention, as recited in claim 2, includes additional features not disclosed or suggested by either Haub or Kummer, namely:

... said support track can be moved by said vertical movement means between a top position suitable for small size articles, in which said support track is substantially level with said transfer surface of said inlet conveyor, and at least one lower position suitable for medium or large size articles, in which said support track is at a lower level than said transfer surface of inlet conveyor, with articles passing from transfer surface to said support track by falling by their own weight as they are moved within areas delimited at least by said radial blades and said railing means. (Emphasis added)

According to Kummer each bottle lifter (16) in the first conveyor is individually lowered flush with the platform (29) in the second conveyor to transfer the bottle from one another (col. 2, lines 50-54). There is no disclosure or suggestion in Kummer, however, that the articles are passed from the support surface of the first conveyor to the support track of the transfer unit by falling by their own weight. It should also be noted that in Kummer the up and down movement of the bottle lifters (16) in the filler unit does not serve to adapt the apparatus to bottles of different heights but rather to engage and disengage the neck of the bottles to and from the filling valves (13) of the rotating tank or bowl (12) in the filler unit.

Because Haub and Kummer in combination do not disclose or suggest every feature of applicants' claim 2, it is respectfully submitted that the rejection of claim 2 as being unpatentable over Haub in view of Kummer is improper, should be withdrawn and the claim allowed.

With respect to claim 13, according to Haub, the radial blades (41) are placed at fixed regular angular intervals in the rotary thrusting wheel, and means are provided to retract the blades (41) when the articles have been transferred but no adjusting means are taught or suggested to adjust the angular intervals to bottles of different sizes. According to Kummer,

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the radial blades (36) in the rotary thrusting wheel are placed at fixed regular angular intervals. There is no disclosure or suggest, however, that adjusting means adjust the angular intervals to accommodate bottles of different sizes.

Because Haub and Kummer in combination do not disclose or suggest every feature of applicants' claim 13, it is respectfully submitted that the rejection of claim 13 as being unpatentable over Haub in view of Kummer is improper, should be withdrawn and the claim allowed.

The Office Action at page 4 sets forth "Claims 3, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haub ... in view of Kummer ... and further in view of Gamberini U.S. Patent No. 4,833,163." Applicants respectfully traverse this rejection for the reasons set forth below.

Applicants' invention, as recited in claims 3 -5, include features not disclosed or suggested by either Haub or Kummer, namely:

... said vertical movement means include at least one unit of a vertical sleeve and nut. (Claim 3):

... said vertical movement means include at least one pair of vertical sleeve and nut units connected together by means of a flexible traction element, such as a chain or belt, which flexible traction element is driven by a pinion gear or drive pulley connected to a power shaft of driving means to rotate said vertical sleeves in one direction or another. (Claim4)

... said driving means include a reducer unit. (Claim 5)

Gamberini is relied upon as "[teaching] a support track that can be moved by vertical movement means by sleeve (23) and nut (26) connected by a flexible traction element driven by a opinion gear or drive pulley connected to a power shaft with a speed reducer driving means to rotate the sleeve in a direction..." Applicants respectfully disagree. In fact, the sleeve (23) and an adjuster device (26) of Gamberini serves to alter the angular position of a slot (25) in relation to lines passing through the pick-up point (A) and a set-down point (B) in order to advance or retard the connections of ducts (10A) with a suction chamber (23A) (col. 4, lines 6-15). No vertical movement is carry out by sleeve (23). Applicants also note that in Gamberini's published non-English priority application the term "sleeve" is a mistranslation of the term

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"husillo." Applicants respectfully submit that either "spindle" or "worm screw" is a more appropriate translation.

Gamberini describes a transfer unit having a rotary wheel (3) for transferring articles (P) from a first (1) to a second (2) conveyor, wherein the rotary wheel (3) uses suction pick-up members (10) to hold the articles (P) from the first conveyor (1) to the second conveyor (2), and an elevator (9) placed at a pick-up point (A) to raise each article (P) coming from the first conveyor (1) enough to be engaged by the corresponding suction pick-up member (10). According to Gamberini, the elevator (9) is moved vertically between a lowered position, in which a support surface thereof is level with a transfer surface of the first conveyor (1), and a raised position, in which an article (P) supported on the support surface of the elevator (9) can be collected by the pick-up member (10) (col. 2, line 64-col. 3 line 3).

Gamberini does not disclose or suggest, however, that the vertical position of the elevator (9) is adjustable by means of at least one assembly of a vertical sleeve and nut for accommodating articles of different sizes having projecting configurations at different heights.

Because Haub, Kummer and Gamberini in any combination do not disclose or suggest every feature of applicants' claim 3, 4 or 5, it is respectfully submitted that the rejection of claim 3-5 as being unpatentable over Haub in view of Kummer and further in view of Gamberini is improper, should be withdrawn and the claims allowed.

The Office Action at page 5 sets forth "Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haub ... in view of Kummer ... and further in view of Yuri U.S. Patent No. 4,974,716." Applicants respectfully traverse this rejection for the reasons set forth below.

Yuri is relied upon as "[disclosing] a thrusting wheel (2) made up of first second circular structures, on opposite sides and the radial blades (15) are attached to the circular structures at predetermined angles and attachment means to provide adjustment between radial blades with speed reducer (C2 L35-45)." Applicants respectfully disagree and submit that Yuri does not disclose or suggest, as in applicants' claim 6, that the thrusting wheel is made up of first and second circular structures, coaxial, and the radial blades include first radial blades attached to the first circular structure and second radial blades attached to the second circular structure, at predetermined angular separations along their respective circumferences, with adjustment and attachment means being provided to adjust the relative angular position between both the first and second circular coaxial structures in order to adapt the separations between the first and second radial blades to different size articles.

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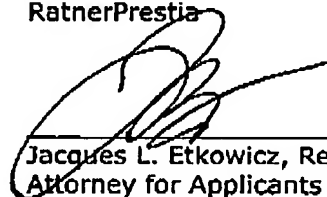
Because Haub, Kummer and Yuri in any combination do not disclose or suggest every feature of applicants' claim 6, it is respectfully submitted that the rejection of claim 6 as being unpatentable over Haub in view of Kummer and further in view of Yuri is improper, should be withdrawn and the claims allowed.

Claim 7-10 depend on claim 6 and, thus, are likewise not subject to rejection for at least the reasons set forth above with respect to claim 6.

In view of the remarks set forth above, applicants submit that that above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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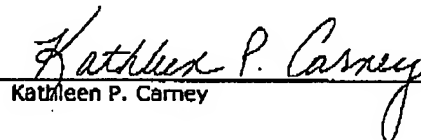
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